DAWOOD PUBLIC SCHOOL

Course out line 2011-2012

Subject Maths

Class – VII

Book:

Seng, T.et al, 2008, *New Syllabus Mathematics 1*(6th Edition), Singapore; Oxford University Press
Seng, T.et al, 2008, *New Syllabus Mathematics 2*(6th Edition), Singapore; Oxford University Press

SYLLABUS AIMS AND ASSESSMENT:

The syllabus demands understanding of basic mathematical concepts and their applications, together with an ability to show this by clear expression and careful reasoning.
In the examination, importance will be attached to skills in algebraic manipulation and to numerical accuracy in calculations.

Aims

The course should enable students to:

- Develop their mathematical knowledge and oral, written and practical skills in a manner which encourages confidence;
- Read mathematics, and write and talk about the subject in a variety of ways;
- Develop a feel for number, carry out calculations and understand the significance of the results obtained;
- Apply mathematics in everyday situations and develop an understanding of the part which mathematics plays in the world around them;
- Solve problems, present the solutions clearly, check and interpret the results;
- Develop an understanding of mathematical principles;
- Recognize when and how a situation may be represented mathematically, identify and interpret relevant factors and, where necessary, select an appropriate mathematical method to solve problems;
- Use mathematics as a means of communication with emphasis on the use of clear expression;
- Develop the abilities to reason logically, to classify, to generalize and to prove;

Assessment objectives:

The examination tests the ability of candidates to:

- Recall, apply and interpret mathematical knowledge in the context of everyday situations;
- Set out mathematical work, including the solution of problems, in a logical and clear form using appropriate symbols and terminology;
- Organize, interpret and present information accurately in written, tabular, graphical and diagrammatic forms;
- Perform calculations by suitable methods;
- Use an electronic calculator;
- Understand systems of measurement in everyday use and make use of them in the solution of problems;
- Estimate, approximate and work to degrees of accuracy appropriate to the context;
- Use mathematical and other instruments to measure and to draw to an acceptable degree of accuracy;
- Recognize patterns and structures in a variety of situations and form generalizations;
- Interpret, transform and make appropriate use of mathematical statements expressed in words or symbols;

Units:

SI units will be used in questions involving mass and measures: the use of the centimeter will continue.

Monthly Syllabus

AUGUST	• Algebraic Equations & Simple Inequalities • Functions and Graphs
SEPTEMBER	• Ratio, Rate and Speed • Expansion and Factorisation of Algebraic Expressions
OCTOBER	• Expansion and Factorisation of Algebraic Expressions (Contd) • Symmetry
NOVEMBER	• REVISION FOR MID TERM
DECEMBER	• **MID TERM EXAMS**
JANUARY	• Number Sequence

	• Statistics
FEBRUARY	• Volume and Surface Area • Simultaneous Linear Equations
MARCH	• Simultaneous Linear Equations • Percentage
APRIL	• REVISION FOR FINAL EXAMS
MAY	• **FINAL TERM EXAMS**

Syllabus Content

Theme or Topic	Subject Content
• Algebraic Equations & Simple Inequalities Book 1, Chap No.7 Pg No.(137-165) ● Functions and Graphs Book 1, Chap No.12 Pg No.(267-288)	*Students should be able to:* • solve simple linear equations in one unknown; • solve fractional equations with numerical and linear algebraic denominators; • demonstrate familiarity with Cartesian coordinates in two dimensions; • calculate the gradient of a straight line from the coordinates of two points on it; • interpret and obtain the equation of a straight line graph in the form $y = mx + c$;
• Ratio, Rate and Proportion Book 1, Chap No. 10 Pg No.(223-245) • Expansion and Factorization of Algebraic Expressions Book 2, Chap No.3 Pg No.(71-108)	•demonstrate an understanding of the elementary ideas and notation of ratio, direct and inverse proportion and common measures of rate; • divide a quantity in a given ratio; • use scales in practical situations, calculate average speed; • express direct and inverse proportion use this form of expression to find unknown quantities. • calculate times in terms of the 12-hour and 24-hour clock; • read clocks, dials and timetables. • use letters to express generalized numbers and express basic arithmetic processes algebraically, substitute numbers for words and letters in formulae; • transform simple and more complicated formulae; • construct equations from given situations. • factorise expressions of the form $ax + ay$ $ax + bx + kay + kby$ $a^2x^2 - b^2y^2$ $a^2 + 2ab + b^2$ $ax^2 + bx + c$
• Symmetry Addendum Book 1 Pg No.(4-22)	• recognize line and rotational symmetry (including order of rotational symmetry) in two dimensions, and properties of triangles, quadrilaterals and circles directly related to their symmetries; • recognize symmetry properties of the prism (including cylinder) and the pyramid (including cone);
• Number Sequence Book 1, Chap No.6 Pg No.(115-135) • Statistics Book 1, Chap No.15 Pg No.(324-350)	• continue given number sequences, recognize patterns within and across different sequences and generalize to simple algebraic statements (including expressions for the *n*th term) relating to such sequences. • Solve problems involving cones, prisms, pyramids, cylinders and/or spheres. • collect, classify and tabulate statistical data; read, interpret and draw simple inferences from tables and statistical diagrams; • construct and use bar charts, pie charts, pictograms,
• Volume and Surface Area Book 1, Chap No.9 Pg No.(191-214)	• solve problems involving (i) the perimeter and area of a rectangle and triangle, (ii) the circumference and area of a circle,

• Simultaneous Linear Equations Book 2, Chap No.5 Pg No.(151-173)	(iii) the area of a parallelogram and a trapezium, (iv) the surface area and volume of a cuboids, cylinder • solve fractional equations with numerical and linear algebraic denominators; • solve simultaneous linear equations in two unknowns;
• Percentage Book 1, Chap No.11 Pg No. (246-266)	• solve problems involving money and convert from one currency to another. • use given data to solve problems on personal and household finance involving earnings, simple interest, discount, profit and loss;

Breadth of study

During the key stage, students should be taught the knowledge, skills and understanding through:
(a) activities that ensure they become familiar with, and confident using, standard

Procedures for the range of calculations appropriate to this level of study;
(b) solving familiar and unfamiliar problems in a range of numerical, algebraic and

Graphical contexts and in open-ended and closed form;
(c) using standard notations for decimals, fractions, percentages, ratio and indices;
(d) activities that show how algebra, as an extension of number using symbols, gives

Precise form to mathematical relationships and calculations;
(e) activities in which they progress from using definitions and short chains of reasoning to understanding and formulating proofs in algebra and geometry;
(f) a sequence of practical activities that address increasingly demanding statistical

Problems in which they draw inferences from data and consider the uses of statistics in society;

Activities:

AUGUST	●Mental Maths ● Maths activity calendar
SEPTEMBER	● Puzzle ● Maths activity calendar
OCTOBER	● Maths Fun Activity ● Maths activity calendar
NOVEMBER	●Maths Quiz/ MCQs ● Maths activity calendar
DECEMBER	●MID TERM EXAMS
JANUARY	● Mental Maths ● Maths activity calendar
FEBRUARY	● Puzzle ● Maths activity calendar
MARCH	● Maths Fun Activity ● Maths activity calendar
APRIL	●Maths Quiz/ MCQS ● Maths activity calendar
MAY	●FINAL TERM EXAMS

Assessment and Home Work

Students will be assessed by taking test of each and every chapter. Home Work shall be given on a daily basis.

Mathematical Notations:

The list which follows summaries the notation used

Mathematical Symbols

=	is equal to
≠	is not equal to
≡	is identical to or is congruent to
≈	is approximately equal to

Operations

$a + b$	a plus b
$a - b$	a minus b
$a \times b$, ab, $a.b$	a multiplied by b
$a \div b$, $\frac{a}{b}$, a/b	a divided by b

Resource List

New Mathematics Syllabus D work book 1,2;

Bostock, L, S Chandler, A Shepherd, E Smith ST(P) Mathematics Books 1A to 5A
(Stanley Thornes)
Book 1A Book 2A
Book 1B Book 2B

Buckwell, Geoff Mastering Mathematics (Macmillan Education Ltd) 0 333 62049 6
Collins, J, Warren, T and C J Cox Steps in Understanding Mathematics (John Murray)
Book 1
Book 2

National Mathematics Project (NMP) Mathematics for Secondary Schools Red Track Books 1 to 5 (Longman Singapore Publishers Pte Ltd)
Book 1
Book 2
Cox, C J and D Bell Understanding Mathematics Books 1–5 (John Murray)
Book 1
Book 2

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